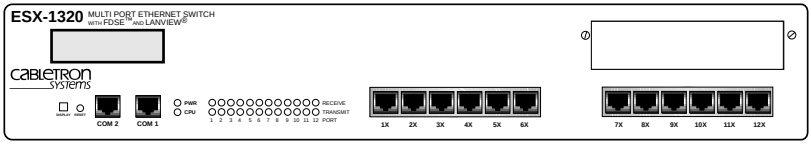
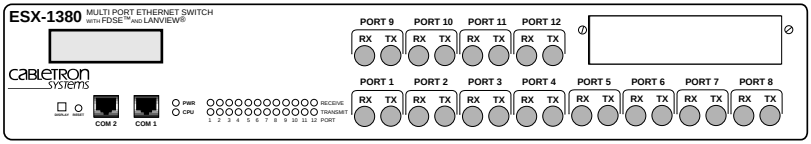
ESX-1320/ESX-1380
LOCAL MANAGEMENT GUIDE





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CHAPTER 1

INTRODUCTION

Welcome to the Cabletron Systems **ESX-1320/ESX-1380 Local Management Guide** for the ESX-1320 and ESX-1380 Ethernet Workgroup Switches. This manual explains how to access and use Cabletron Systems Local Management for the ESX. Local Management provides monitoring and control capabilities for the ESX and its attached segments.

The ESX-1320 and ESX-1380 Ethernet Workgroup Switches, shown in Figure 1-1, are standalone network switch devices. Except for the difference in the network Media supported (ESX-1320, RJ45 Twisted Pair ports and ESX-1380, Multimode Fiber Optic ST ports), the two ESX switches are identical in operation.

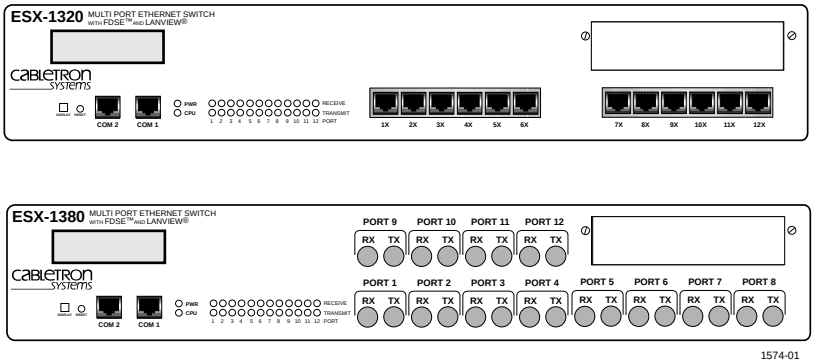
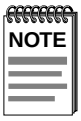


Figure 1-1 ESX-1320 and ESX-1380 Switches



Throughout this manual the term ESX refers to both switches, the ESX-1320 and the ESX-1380. If the information applies to only one of the switches, then that switch is referred to by its model name, ESX-1320 or ESX-1380.

This manual describes the following:

- Accessing the Local Management application
- Identifying and operating the types of fields used by Local Management
- Navigating through Local Management fields and menus
- Using Local Management screens to perform management operations

1.1 USING THIS MANUAL

A general working knowledge of basic network operations and an understanding of management applications is helpful prior to using Cabletron Systems Local Management.The following summarizes the organization of this manual.

Chapter 1, **Introduction**, outlines the contents of this manual, provides an overview of Local Management, and explains how to use the management screens.

Chapter 2, **Local Management Requirements**, describes the setup requirements for accessing Local Management. It also explains how to configure a management terminal and connect it to the ESX.

Chapter 3, **Accessing Local Management**, describes how to access the Main Menu screen and navigate the Local Management screens.

Chapter 4, **The System Level Screen**, describes how to use the System Level screen, its functions, and operations.

Chapter 5, **The SNMP Community Names Screen**, explains how to control access to the ESX by assigning community names.

Chapter 6, **The SNMP Traps Screen**, explains how to configure the ESX to send SNMP trap messages to multiple network management stations.

Chapter 7, **The FLASH Download Screen**, describes how to download a new firmware image to the ESX FLASH EEPROM.

Chapter 8 **The Bridge Setup Screen**, describes how to configure the ESX for bridge functions.

Chapter 9, **The Device Specific Setup Screen**, describes how to configure the ESX interface 13 connection method.

Chapter 10, **The Port Redirect Function Screen**, discusses how to set each one of the ESX ports as a source or destination port.

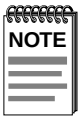
Chapter 11, **The Component Status Screen**, discusses how to view the status of ESX MIB components.

Chapter 12, **The MIB-2 Statistics Screen**, discusses how to configure the ESX to gather statistics for each interface.

Chapter 13, **The MIB Navigator Screen**, describes how to access and use the MIB Navigator screen. This chapter also includes examples for MIB Navigator commands.

1.2 DOCUMENT CONVENTIONS

The following conventions are used throughout this document:



Note symbol. Calls the reader's attention to any item of information that may be of special importance.

Tip symbol. Conveys helpful hints concerning procedures or actions.

Caution symbol. Contains information essential to avoid damage to the equipment.

1.3 LOCAL MANAGEMENT OVERVIEW

Cabletron Systems Local Management is a management tool that allows a network manager to perform the following tasks:

- Configure the devices interconnected to form a network
- Monitor the network's performance
- Control user access to the network and its components for the purpose of security

1.3.1 The Management Agent

The management agent is a process within the ESX which collects statistical information (e.g., frames received, errors detected) about the managed network's operational performance. Local Management communicates with the management agent for the purpose of viewing statistics or issuing management commands.

1.3.2 In-Band vs. Out-of-Band

Network management systems are often classified as either in-band or out-of-band. In-band network management passes data along the same medium (cables, frequencies) used by all other stations on the network. An example of an in-band network management system is Cabletron Systems SPECTRUM.

Out-of-band network management passes data along a medium that is entirely separate from the network's common data carrier, for example, a cable connection between a dumb terminal and the ESX COM port. Cabletron Systems Local Management is an out-of-band network management system.

A device connected out-of-band to the management agent is not connected to the LAN. This type of connection allows you to communicate with a network device even when that device is unable to communicate through the network, for example, at the time of installation.

1.3.3 Local vs. Remote Management

Network management applications are usually described as either local or remote management applications. Local Management applications reside within the management device's management agent. Remote management applications run within the circuits of another device that provides management services. This allows you to perform network management from a remote location.

1.4 LOCAL MANAGEMENT REQUIREMENTS

The ESX provides two communication ports, labeled COM 1 and COM 2, that support a management terminal connection. To access Local Management, connect one of the following systems to either COM 1 or COM 2:

- Digital Equipment Corporation VT series terminal
- VT type terminal running emulation programs for the Digital Equipment Corporation VT series
- IBM or compatible PC running a VT series emulation software package

You can also access Local Management using a Telnet connection through one of the ESX network ports.

Chapter 2, **Local Management Requirements**, describes the setup requirements for accessing Local Management. It also explains how to configure a management terminal and connect it to the ESX.

1.5 LOCAL MANAGEMENT SCREEN ELEMENTS

Local Management screens consist of five basic elements, or fields. Figure 1-2 shows a Local Management screen and points out the various types of fields.

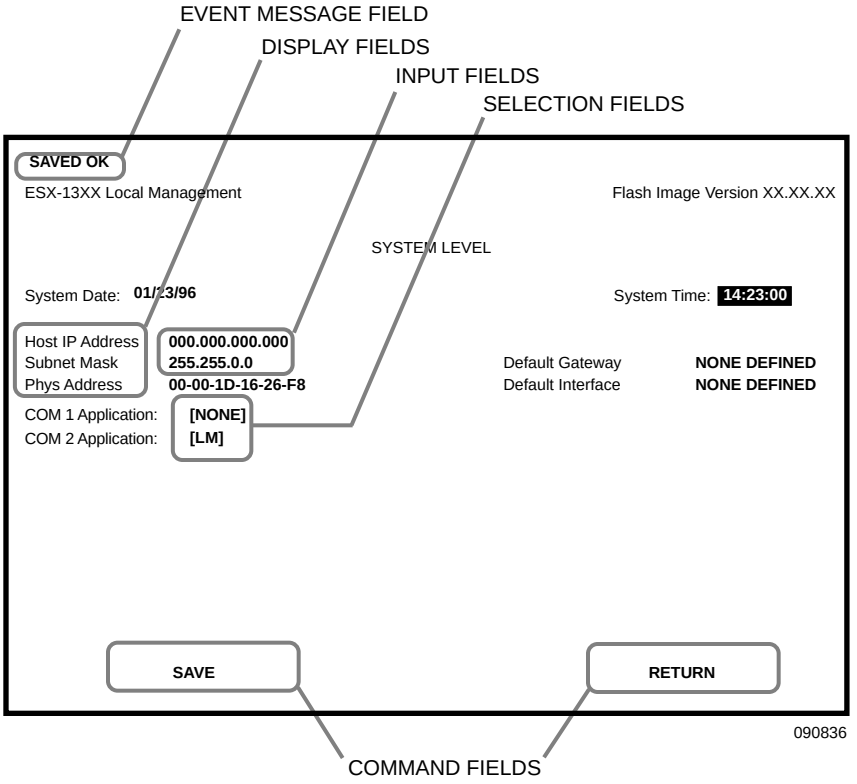


Figure 1-2 Sample Local Management Screen

The following list explains each of the Local Management fields:

Event Message Field
This field briefly displays messages that indicate if a Local Management procedure was executed correctly or incorrectly, that changes were saved or not saved to Non-Volatile Random Access Memory (NVRAM), or that a user did not have access privileges to an application.

Table 1-1 describes the most common event messages. Event messages related to specific Local Management applications are described with those applications throughout this manual.

Table 1-1 Event Messages

Message	What it Means
SAVED OK	One or more fields were modified, and saved to NVRAM.
NOT SAVED?--PRESS SAVE TO KEEP CHANGES	One or more fields were modified, but not saved to NVRAM.
NOTHING TO SAVE	The SAVE command was executed, but nothing was saved to NVRAM.

Display Fields
Display fields cannot be edited. These fields may display information which never changes, or information which may change as a result of Local Management operations, user selections, or network monitoring information.

Input Fields
Input fields require the entry of keyboard characters. IP addresses, System Date, and System Time are examples of Input fields.

Selection Fields
Selection fields provide a series of possible values. Only applicable values appear in Selection fields.

Command Fields
Command fields are located at the bottom of Local Management screens. Command fields are used to exit Local Management screens and to save Local Management entries.

1.6 LOCAL MANAGEMENT KEYBOARD CONVENTIONS

All key names appear in this manual as capital letters. For example, the Enter key appears as ENTER, the Escape key appears as ESC, and the Backspace key appears as BACKSPACE. The table below explains the keyboard conventions used in this manual as well as the key functions.

Key	Function
ENTER and RETURN	These are selection keys that perform the same Local Management function. For example, “Press ENTER” means that you can press either ENTER or RETURN, unless this manual specifically instructs you otherwise.
ESC	This key lets you escape from a Local Management screen without saving your changes. For example, “Press ESC twice” means that you must quickly press the escape key two times to exit the Local Management screen.
SPACE bar and BACKSPACE	These keys cycle through selections in some Local Management fields. Use the SPACE bar to cycle forward through selections and use BACKSPACE to cycle backward through selections.
Arrows	These are navigation keys. Use the UP-ARROW, DOWN-ARROW, LEFT-ARROW, and RIGHT-ARROW keys to move the screen cursor. For example, “Use the arrow keys” means to press whichever arrow key moves the cursor to the desired field on the Local Management screen.

[+/=]	This key increments values in some Local Management selection fields. For example, “Press [**+/=**]” means to press the plus/equal key.
[**–**] Key	This key decreases values from some Local Management selection fields. For example, “Press [**–**]” means to press the minus key.
DEL	The DEL (Delete) key removes characters from a Local Management Selection field. For example, “Press DEL” means to press the delete key.

1.7 NAVIGATING LOCAL MANAGEMENT SCREENS

To navigate within a Local Management screen, use the arrow keys of the terminal or the workstation providing terminal emulation services. The Local Management screen cursor responds to the LEFT, RIGHT, UP, and DOWN arrow keys. Each time you press an arrow key, the Local Management screen cursor moves to the next available field in the direction of the arrow key.

The Local Management screen cursor only moves to fields which can be selected or used for input. This means that the cursor jumps over display fields and empty lines on the Local Management screen.

The Local Management screen cursor provides wrap-around operation. This means that a cursor located at the edge of a screen, when moved in the direction of that edge, “wraps around” to the outermost selectable item on the opposite side of the screen which is on the same line or column.

1.8 GETTING HELP

If you need additional support related to Local Management, or if you have any questions, comments, or suggestions concerning this manual, contact Cabletron Systems Technical Support:

By phone	(603) 332-9400
	Monday – Friday; 8 A.M. – 8 P.M. Eastern Time
By CompuServe	GO CTRON from any ! prompt
By Internet mail	support@ctron.com
By FTP	ctron.com (134.141.197.25)
Login	*anonymous*
Password	*your email address*

Before calling Cabletron Systems Technical Support, have the following information ready:

- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The serial and revision numbers of all Cabletron Systems products in the ESX network
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

CHAPTER 2
LOCAL MANAGEMENT REQUIREMENTS

This chapter describes how to attach a Local Management terminal to the Cabletron Systems host device, and lists the setup and configuration requirements for the following equipment:

- Console/terminal
- Console cable
- Console cable connections

2.1 CONFIGURING A LOCAL MANAGEMENT TERMINAL

The following instructions explain how to configure your management terminal (console) to communicate with Local Management. Refer to your specific management terminal manual for more instructions if necessary.

To access Local Management, use one of the following systems:

- Digital Equipment Corporation VT series terminal
- VT type terminal running emulation programs for the Digital Equipment Corporation VT series
- IBM or compatible PC running a VT series emulation software package

2.2 MANAGEMENT TERMINAL SETUP REQUIREMENTS

Table 2-1 lists the setup parameters for the management terminal. If the management terminal is a Digital Equipment Corporation VT220 or a VT320 terminal, press F3 to access the Setup Directory. If the management terminal uses terminal emulation of the VT320, refer to the equipment user manual for setup procedures.

Table 2-1 Terminal Setup Parameters

Menu	Function	Selection
Display Setup	Columns	80 Columns
	Controls	Interpret Controls
	Auto Wrap	No Auto Wrap
	Test Cursor	Cursor
General Setup	Mode	7 Bit Control
	Cursor Keys	Normal Cursor Keys
Communications Setup	Transmit	Transmit = 9600
	Receive	Receive = Transmit
	XOFF	any option
	Bits, Parity	8 Bits, No Parity
	Stop Bit	1 Stop Bit
	Local Echo	No Local Echo
	Port	DEC-423, Data Leads Only
	Transmit	any option
	Auto Answerback	No Auto Answerback
Keyboard Setup	Auto Repeat	any option
	Keyclick	any option
	Margin Bell	Margin Bell
	Warning Bell	Warning Bell
	Auto Answerback	No Auto Answerback

2.3 CABLE CONFIGURATION FOR THE MANAGEMENT TERMINAL

This section outlines the proper cable configurations to connect a management terminal to the ESX.

You need an adapter kit containing the following items to connect a terminal to the ESX:

- One RS232 cable
- One VT series adapter
- One device cable

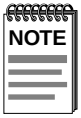
The adapter you use depends on whether you connect a VT220 or a VT320 terminal or a PC emulating a VT320 to the ESX COM port. Read the information included with the adapter kit to make sure that you are using the correct adapter.

To configure the cables, perform the following steps:

1. Plug a straight-through twisted pair cable (e.g., an RS232 cable) into an ESX COM port.
2. Plug the other end of the RS232 cable into the adapter.
3. Connect the adapter into the device cable and plug the other end of the device cable into the terminal.
4. Power on the terminal. Access to Local Management is automatic; however, because of the auto-baud detection, you may need to press ENTER.

2.4 ESTABLISHING A TELNET CONNECTION

Once the ESX has a valid IP address, you can establish a Telnet session with Local Management from any TCP/IP based node on the network. Telnet connections to the host device require the community name passwords assigned at the SNMP Community Names screen. Refer to the SNMP Community Names section of this manual for additional information about community names.



See the instructions included with the Telnet application for information about establishing a Telnet session.

CHAPTER 3
ACCESSING LOCAL MANAGEMENT

This chapter explains how to access and use the Local Management menu screens. Menu screens provide a path to the setup screens, statistic screens, and status screens.

3.1 USING THE MENU SCREENS

Verify that your terminal has been properly connected to the ESX before proceeding.

To access Local Management, perform the following steps:

1. Power on the terminal. The ESX Password screen, Figure 3-1, appears.

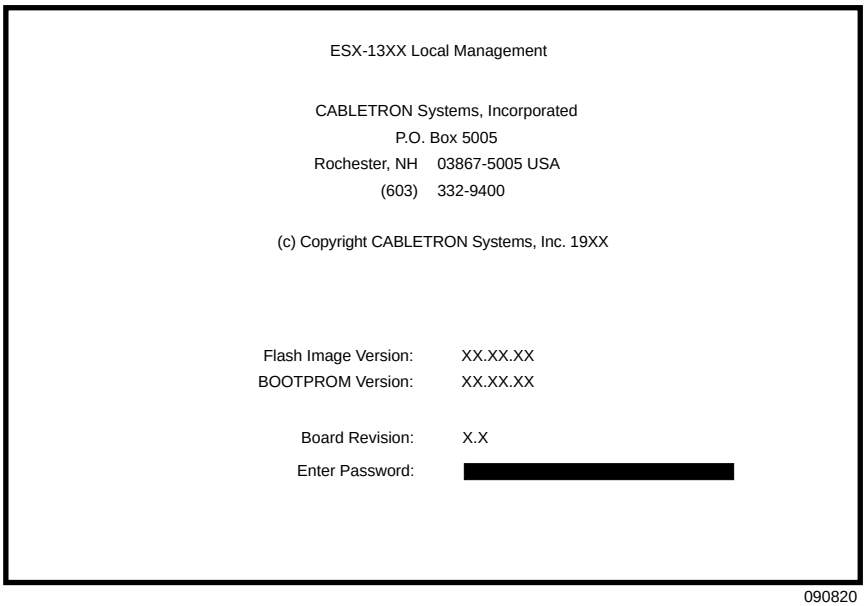


Figure 3-1 The ESX Password Screen

2. Enter your password and press ENTER. The default super-user access password is "*public*" or press ENTER.

Your password is one of the community names specified in the SNMP Community Names screen. Access to certain Local Management capabilities depends on the degree of access accorded that community name. See the SNMP Community Names section.

- If you enter an invalid password the cursor returns to the beginning of the password entry field.
- If you enter a valid password, the associated access level displays at the bottom of the screen and the Main Menu screen, Figure 3-3, appears.
- If no activity occurs for several minutes the Password screen reappears indicating that you must re-enter the password.

3.2 NAVIGATING LOCAL MANAGEMENT SCREENS

Local Management consists of a series of menu screens that provide a path to each of the Local Management function screens. You navigate through Local Management by selecting items from the menu screens. ESX Local Management consists of the following menu screens:

- Main Menu screen
- Setup Menu screen
- Status Menu screen
- Statistics Menu screen
- MIB Navigator screen

Figure 3-2 shows the hierarchy of Local Management screens.

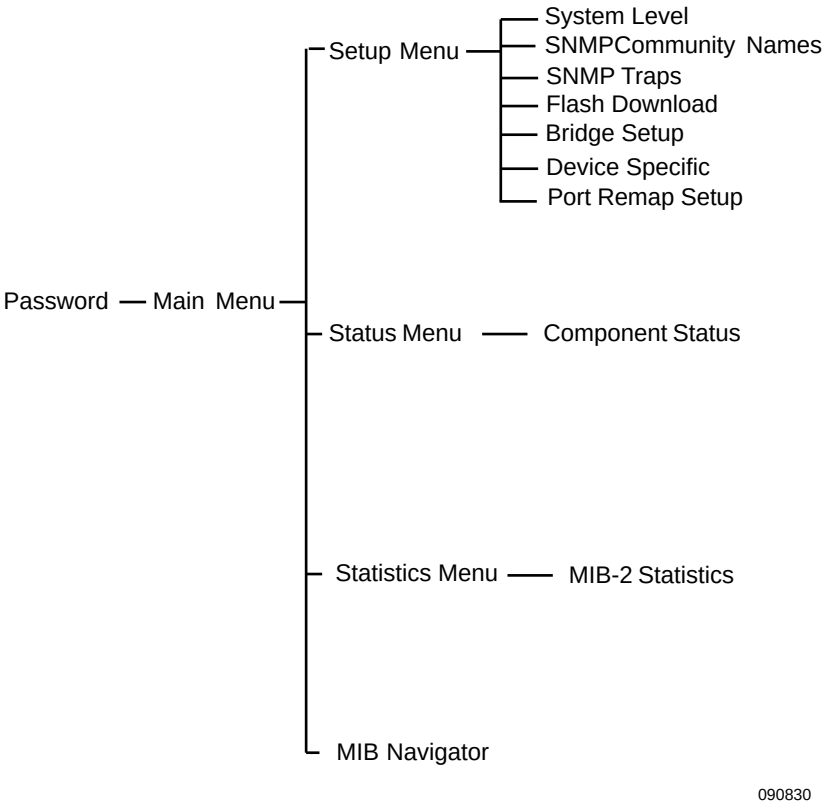


Figure 3-2 Hierarchy of Local Management Screens

3.2.1 Selecting Local Management Menu Screen Items

To select items on a Local Management menu screen, perform the following steps:

1. Use the arrow keys to highlight a menu item.
2. Press ENTER. The selected Local Management menu screen appears.

3.2.2 Exiting Local Management Screens

To exit any of the Local Management screens, perform the following steps:

1. Use the arrow keys to highlight the **RETURN** command field at the bottom of the Local Management screen.
2. Press ENTER. The previous screen in the Local Management hierarchy appears.

You can also exit Local Management screens by pressing ESC twice. This exit method does not warn you about unsaved changes and all unsaved changes will be lost.

3.2.3 Exiting the Local Management Session

To exit from ESX Local Management, perform the following steps:

1. Use the arrow keys to highlight the **RETURN** command field at the bottom of the Local Management screen.
2. Press ENTER. The previous screen in the Local Management hierarchy appears.
3. Repeat steps 1 and 2 until the Main Menu screen appears.
4. Use the arrow keys to highlight the **EXIT** command field at the bottom of the Main Menu screen.
5. Press ENTER. The ESX Local Management Password screen appears and the Local Management session ends.

3.3 THE MAIN MENU SCREEN

The Main Menu screen is the starting point from which all the Local Management screens are accessed. Figure 3-3 shows the Main Menu screen.

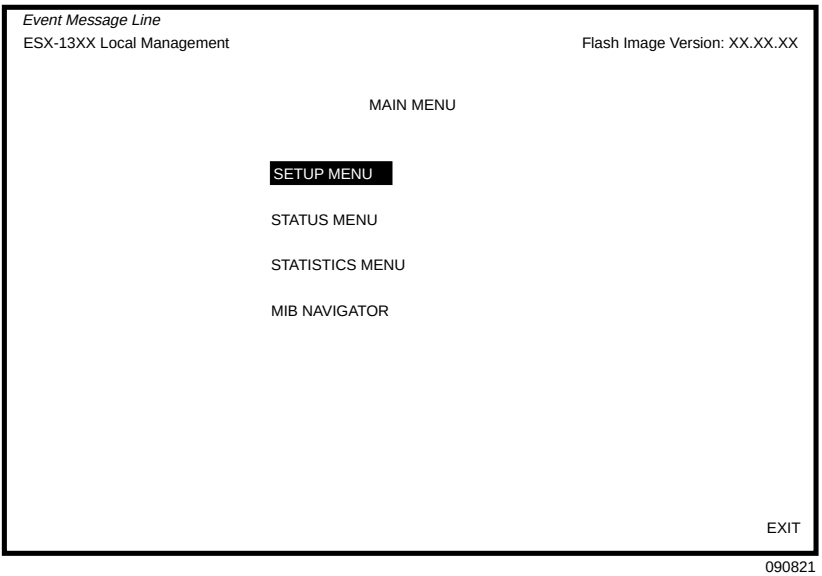


Figure 3-3 The Main Menu

The Main Menu screen displays the following menu items:

- **Setup Menu** – The Setup Menu provides access to Local Management screens that are used to configure the ESX.
- **Status Menu** – The Status Menu provides access to the Component Status screen which displays the operational and administrative status of ESX MIB components.
- **Statistics Menu** – The Statistics Menu provides bridge statistics and performance information for the switch interfaces of the ESX.
- **MIB Navigator** – The MIB Navigator is a Local Management utility which allows the user to access, monitor, and set specific Management Information Base (MIB) items within the ESX.

3.4 THE SETUP MENU SCREEN

The Setup Menu provides access to Local Management screens that are used to configure or alter the configuration of the ESX. Examples of functions accessible through the Setup Menu include configuring the host IP address and subnet mask, assigning SNMP community names, and configuring SNMP trap notification. Figure 3-4 shows the Setup Menu.

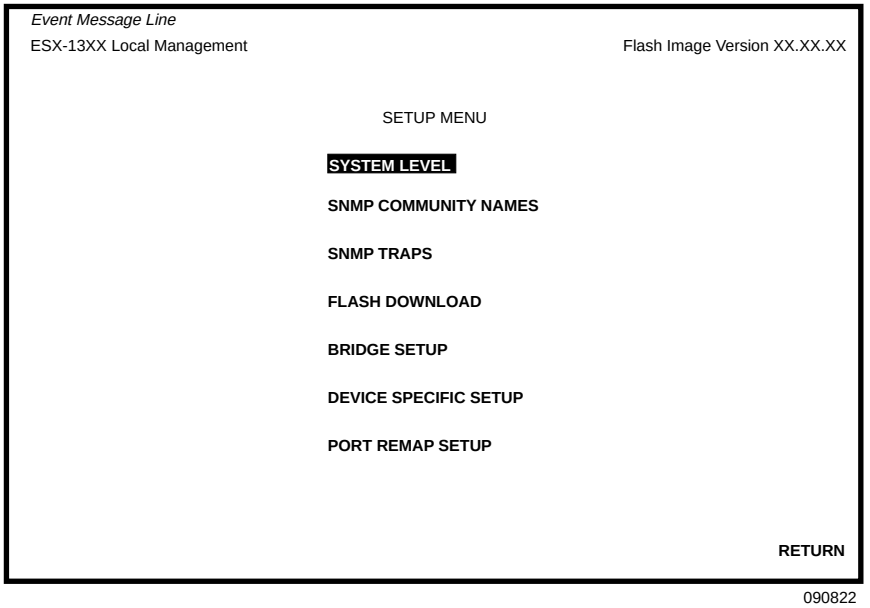


Figure 3-4 The Setup Menu

The Setup Menu displays the following menu items:

- **System Level** – The System Level Setup screen allows you to configure basic operating parameters for the ESX.
- **SNMP Community Names** – The SNMP Community Names Setup screen allows you to change or review the community names used as access passwords for local management operation.
- **SNMP Traps** – The SNMP Traps Setup screen provides display and configuration access to the table of IP addresses used for trap destinations and associated community names.

- **FLASH Download** – The FLASH Download screen allows you to download a firmware image from a TFTP server.
- **Bridge Setup** – The Bridge Setup screen allows you to select a Spanning Tree protocol and enable/disable ports.
- **Device Specific Setup** – Provides display and configuration access to the specific BRIM in interface 13.
- **Port Remap Setup** – The Port Remap screen allows you to copy frames from a source port to a destination port.

3.5 THE STATUS MENU SCREEN

Figure 3-5 shows the Status Menu screen. The Status Menu screen provides access to the Component Status screen.

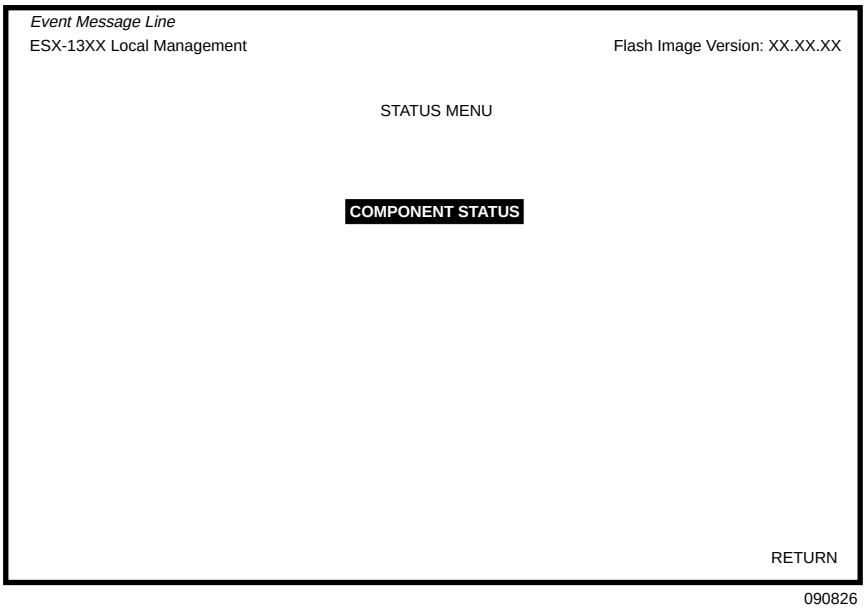


Figure 3-5 The Status Menu Screen

3.6 THE STATISTICS MENU SCREEN

Figure 3-6 shows the Statistics Menu screen. The Statistics Menu screen provides access to the MIB-2 Statistics screen.

Figure 3-6 The Statistics Menu Screen

CHAPTER 4
THE SYSTEM LEVEL SCREEN

This chapter explains how to use the System Level screen to set the following parameters:

System Date	System Time
Host IP Address	Subnet Mask
Default Interface	Default Gateway
COM 1 Port Application	COM 2 Port Application

4.1 SYSTEM LEVEL SCREEN FIELDS

Figure 4-1 shows the ESX System Level screen.

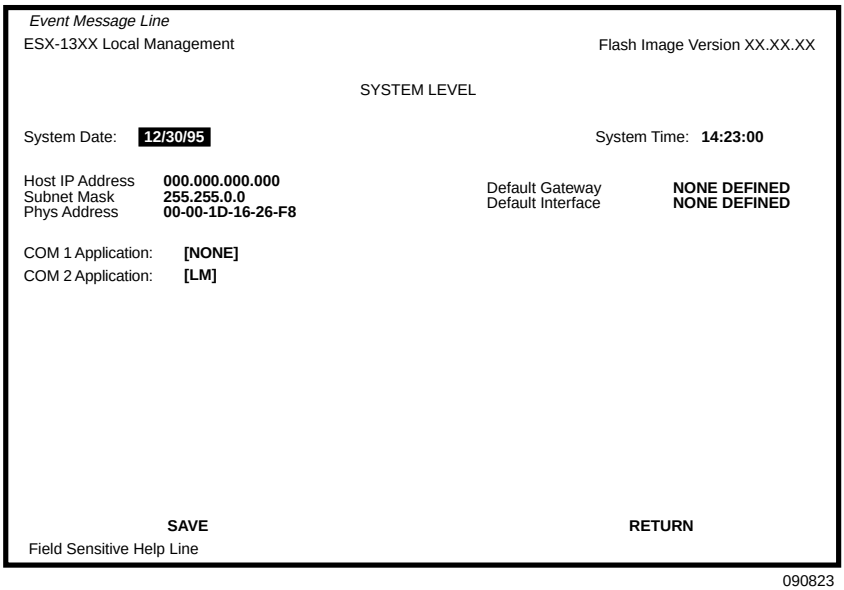


Figure 4-1 The System Level Screen

The following definitions explain each System Level screen field.

System Date
Use this field to enter the system date.

System Time
Use this field to enter the system time.

Host IP Address
Use this field to enter the IP address of the ESX.

Subnet Mask
Use this field to enter the subnet mask for the ESX. Subnets are logical divisions of the network that isolate groups of devices.

The subnet mask will default to a standard Class A, B, or C subnet mask depending upon the IP address Class of the entry in the **Host IP Address** field. This default subnet mask may be modified if needed.

Default Gateway
Use this field to enter the default gateway for the ESX. The default gateway is the IP address of the network device (gateway or router) used to forward SNMP traps to a management station. The default setting for this field is NONE DEFINED.

Phys Address
This field displays the physical MAC address of the ESX. You can not modify the physical MAC address.

Default Interface
Use this field to select the default interface for the ESX default gateway. The default interface is the channel that is set up to handle message traffic to the default gateway. The default setting for this field is NONE DEFINED.

COM 1 Application
Use this field to select the communication port's application. The setting for this field is LM.

COM 2 Application
Use this field to select the communication port's application. The setting for this field is LM.

4.2 SETTING THE SYSTEM DATE

To set the system date, perform the following steps:

1. Use the arrow keys to highlight the **System Date** field.
2. Enter the date in a MM/DD/YY format.

When entering the date in the system date field, you do not need to add separators between month, day, and year numbers, as long as each entry uses two decimal numbers. For example, to set the date to 03/17/96, type "031796" in the System Date field.

3. Press ENTER to set the system calendar.
4. Use the arrow keys to highlight the **SAVE** command field at the bottom of the screen and press ENTER.

   If the date entered was a valid format, the Event Message field at the top of the screen displays "SAVED OK". If the entry was not valid, Local Management does not alter the current value and refreshes the System Date field with the previous value.

4.3 SETTING THE SYSTEM TIME

To set the system clock, perform the following steps:

1. Use the arrow keys to highlight the **System Time** field.
2. Enter the time in a 24-hour format, HH:MM:SS.

When entering the time in the system time field, you do not need to add separators between hours, minutes, and seconds, as long as each entry uses two decimal numbers. For example, to set the time to 6:45 A.M., type “064500” in the System Time field.

3. Press ENTER to set the system clock.
4. Use the arrow keys to highlight the **SAVE** command field at the bottom of the screen and press ENTER.

   If the time entered was a valid format, the Event Message field at the top of the screen displays “SAVED OK”. If the entry was not valid, Local Management does not alter the current value and refreshes the System Time field with the previous value.

4.4 SETTING THE HOST IP ADDRESS

To set the host IP address, perform the following steps:

1. Use the arrow keys to highlight the **Host IP Address** field.
2. Enter the IP address using Decimal Dotted Notation (DDN) format.

   For example: 134.141.25.17
3. Press ENTER. If the IP address entered was a valid format, the cursor returns to the beginning of the Host IP Address field. If the entry was not valid, the Event Message field displays “INVALID IP ADDRESS OR FORMAT ENTERED”. Local Management does not alter the current value and refreshes the Host IP Address field with the previous value.
4. Use the arrow keys to highlight the **SAVE** command field.

Changing the ESX IP address requires a reset of the module. Local Management will automatically reset the ESX, which will go through startup operations before bridging will resume.

5. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”. This message flashes briefly, then the Event Message line will display “System Reboot in Progress....” Local Management will be terminated and the screen will freeze while the ESX resets.

After the ESX resets, the Password screen appears and you must re-enter Local Management.

4.5 SETTING THE SUBNET MASK

Subnets are logical divisions of the network. To change the subnet mask from its default value, perform the following steps:

1. Use the arrow keys to highlight the **Subnet Mask** field.
2. Enter the subnet mask using Decimal Dotted Notation (DDN) format. Values for each decimal must range from 0-255.

   For example: 255.255.0.0
3. Press ENTER. If the subnet mask entered was a valid format, the cursor returns to the beginning of the Subnet Mask field. If the entry was not valid, the Event Message field displays “INVALID SUBNET MASK OR FORMAT ENTERED”. Local Management does not alter the current value and refreshes the Subnet Mask field with the previous value.
4. Use the arrow keys to highlight the **SAVE** command field.
5. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

4.6 SETTING THE DEFAULT GATEWAY

To set the default gateway, perform the following steps:

1. Use the arrow keys to highlight the **Default Gateway** field.
2. Enter the IP address of the default gateway using DDN format.

   For example: 134.141.79.121
3. Press ENTER. If the default gateway entered was a valid format, the cursor returns to the beginning of the Default Gateway field. If the entry was not valid, the Event Message field displays “INVALID DEFAULT GATEWAY OR FORMAT ENTERED”. Local Management does not alter the current value and refreshes the Default Gateway field with the previous value.
4. Use the arrow keys to highlight the **SAVE** command field.
5. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

4.7 SETTING THE DEFAULT INTERFACE

To set the default interface, perform the following steps:

Before setting the default interface, you need to assign a default gateway.

1. Use the arrow keys to highlight the **Default Interface** field.
2. Enter the interface number for the default gateway in this field.
3. Press ENTER. If the interface entered was a valid format, the cursor returns to the beginning of the Subnet Mask field. If the entry was not valid, the Event Message field displays “PERMISSIBLE RANGE: 1...1”. Local Management does not alter the current value and refreshes the Default Interface field with the previous value.
4. Use the arrow keys to highlight the **SAVE** command field.
5. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

4.8 COM PORT APPLICATIONS

The ESX communication ports support the following application:

- Cabletron Systems Local Management connections

CHAPTER 5
THE SNMP COMMUNITY NAMES SCREEN

This chapter explains how to assign community names. Community names allow you to control Local Management access by establishing three passwords. Each password controls varying levels of access to ESX Local Management. Figure 5-1 shows the SNMP Community Names screen.

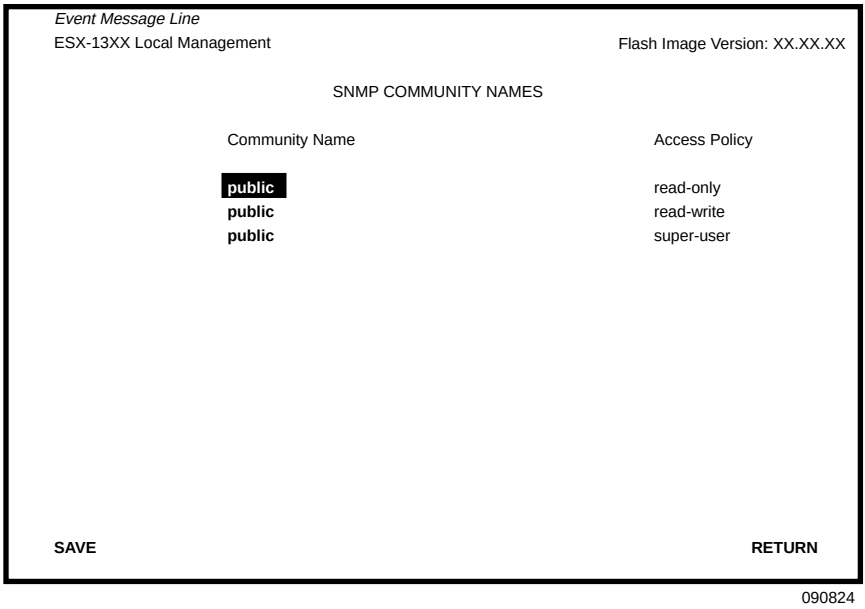


Figure 5-1 The SNMP Community Names Screen

5.1 COMMUNITY NAME ACCESS POLICY

In order to perform any operations in the SNMP Community Names screen, you must have used the super-user community name at the User Password prompt when initiating the Local Management session. The default community name for each access level is *public* or press ENTER.

The following definitions explain each of the three levels of access:

read-only
This access level allows reading of device parameters including read-only community names.

read-write
This access level allows the reading of parameters and the read-only and read-write community names. The read-write access level also allows the editing of some device parameters, not including community names.

super-user
This access level allows full management privileges.

5.2 SETTING SNMP COMMUNITY NAMES

To set a community name, perform the following steps:

1. Use the arrow keys to highlight the community name you want to change.
2. Type the new community name and press ENTER. The old community name text disappears and is replaced by the new community name.
3. Use the arrow keys to highlight the **SAVE** command field.
4. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

If you edit the super-user community name, be certain you do not forget it. If you do, you will be unable to perform Local Management functions without returning the community names to their factory default configurations.

CHAPTER 6
THE SNMP TRAPS SCREEN

This chapter explains how to configure the SNMP Traps screen to allow the ESX to send traps to as many as eight remote management workstations. SNMP traps are messages about network events and device operational statistics. The following sections explain SNMP Trap screen fields and instructions for configuring them. Figure 6-1 shows the SNMP Traps screen.

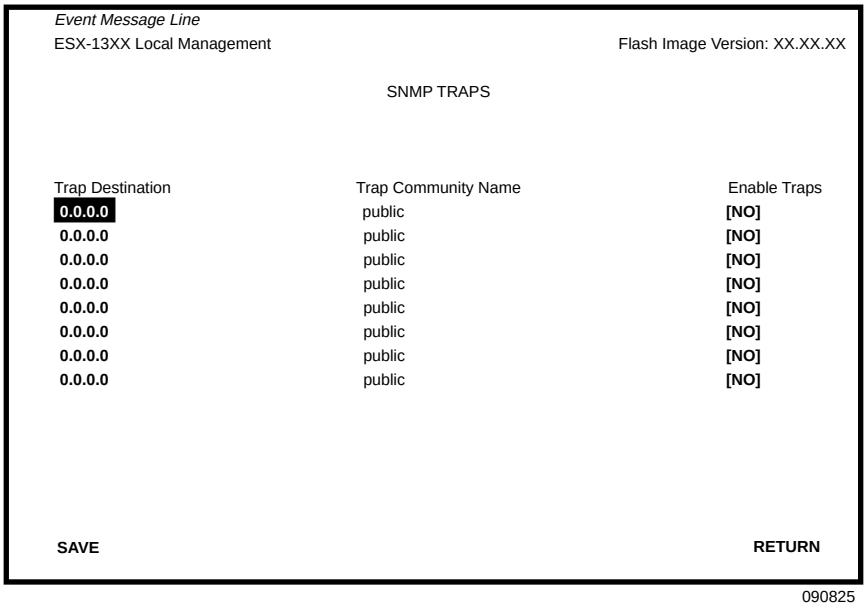


Figure 6-1 The SNMP Traps Screen

6.1 TRAP TABLE SCREEN FIELDS

The following definitions explain each of the SNMP Traps screen fields:

Trap Destination

Use this field to enter the IP address of the management workstation designated to receive SNMP traps from the ESX.

Trap Community Name
This field allows you to enter the community name which provides the desired level of trap access for the management workstation in question. Some SNMP traps may not be available to stations which are given read-only or read-write access to the SNMP MIB.

Enable Traps
Use this field to enable the transmission of SNMP traps to the management workstation.

6.2 SETTING THE SNMP TRAP DESTINATION

Each management workstation designated to receive SNMP traps from the ESX must have a valid IP address and community name. To set and enable SNMP trap destination, perform the following steps:

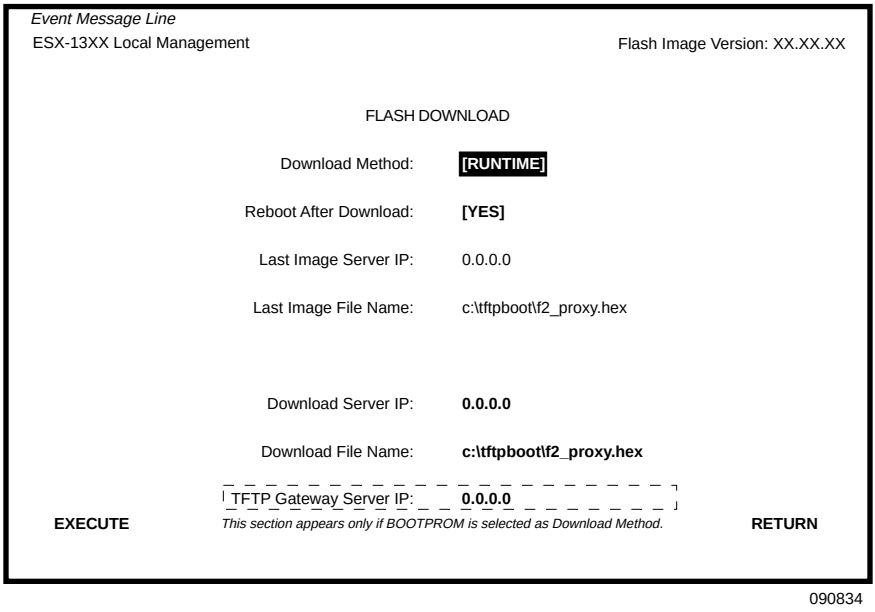
1. Use the arrow keys to highlight the **Trap Destination** field you want to modify.
2. Type the IP address of the management workstation designated to receive SNMP traps from the ESX. This address must be entered in DDN format.

   For example: 134.141.25.17
3. Press ENTER.
4. Use the arrow keys to highlight the **Trap Community Name** field (on the same row as the Trap Destination field).
5. Type the community name of the management workstation.
6. Press ENTER.
7. Use the arrow keys to highlight the **Enable Traps** field (in the same row as the Trap Destination and Trap Community Name you have just configured). The default setting for this field is **NO**.
8. Press SPACE bar or BACKSPACE to set the field to **YES**.
9. Use the arrow keys to highlight the **SAVE** command field.
10. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

CHAPTER 7
THE FLASH DOWNLOAD SCREEN

This chapter explains how to use the FLASH Download screen to download a firmware image from a TFTP server to the ESX. Figure 7-1 shows the FLASH Download screen.

FLASH download operations require a properly named download file and a properly configured download server.



090834

Figure 7-1 The FLASH Download Screen

7.1 SELECTING A FLASH DOWNLOAD METHOD

1. Use the arrow keys to highlight the **Download Method** field.
2. Press SPACE bar or BACKSPACE to select a FLASH download method.
   - If you select **RUNTIME**, the **Reboot After Download** field appears.
   - If you select **BOOTPROM**, the **Commit to Flash** field and the **TFTP Gateway Server IP** field appear.

7.1.1 BootPROM Download

If you select a BootPROM download, perform the following steps:

1. Use the arrow keys to highlight the **Commit to Flash** field.
2. Use the SPACE bar or BACKSPACE to select one of the following:
   - **YES**, if you want the ESX to copy the firmware image to FLASH memory once the download has been completed.
   - **NO**, if you want the ESX to continue operating without updating the firmware image currently stored in FLASH memory. If the ESX is reset or restarted, it will start up from the previous firmware image which is contained in FLASH memory, discarding the download firmware in LDRAM.
3. Use the arrow keys to highlight the DDN Format IP Address next to the **TFTP Gateway Server IP** field.
4. Enter the IP address of the TFTP gateway server.

7.1.2 Runtime Download

If you select runtime download, perform the following steps:

1. Use the arrow keys to highlight the **Reboot After Download** field.
2. Use the SPACE bar or BACKSPACE to select one of the following:
    - **YES**, if you want the ESX to reboot and use the new firmware image immediately.
    - **NO**, if you want the ESX to continue using the existing firmware image without interrupting network operation. The ESX stores the new firmware image in FLASH memory. When you reset the ESX, it boots from FLASH memory using the new image.

7.2 SELECTING A FLASH DOWNLOAD SERVER

Directly below the **Download Method** and **Reboot After Download/ Commit to Flash** toggle fields are the **Download Server** and **Download File** display and input fields. The **Download Server** input field contains the IP address of the server that the ESX will request a firmware image from. By default, the **Download Server** field will display the last IP address used for a firmware image download. If the same server is to be used to perform the current download, no changes need to be made to the **Download Server** input field.

The **Download File** input field contains the filename of the firmware image to be downloaded and the access path used to locate it on the server. By default, the **Download File** input field will display the last firmware image filename and path used to perform a download to the ESX. If there have been no changes to the server or the filename and path, these defaults can be used without changes being required.

7.2.1 Changing the Download Server IP

To change the IP address of the FLASH Download server, perform the following steps:

1. Use the arrow keys to highlight the **DOWNLOAD SERVER IP** field.
2. Type the IP address of the server to be used for the download.
3. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

7.2.2 Changing the Download File Name

To change the name of the firmware image file that Local Management loads from the FLASH Download server, perform the following steps;

1. User the arrow keys to highlight the **DOWNLOAD FILE NAME** field.
2. Type the complete path and filename of the new image file to be downloaded. You must include all directories and subdirectories involved in accessing the file. Type the new entry over the previous entry.
3. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

7.3 PERFORMING A FLASH DOWNLOAD OPERATION

Perform a FLASH download using either of the following methods:

1. Use the arrow keys to highlight the **EXECUTE** command field located at the bottom of the FLASH Download screen.
2. Press ENTER to begin the download. The ESX attempts to download the file using the IP address, file name, and path provided. This file is assigned to the FLASH memory of the ESX.

CHAPTER 8
THE BRIDGE SETUP SCREEN

This chapter explains how to use the Bridge Setup screen to select a Spanning Tree protocol and enable/disable bridge ports. Figure 8-1 shows the Bridge Setup screen.

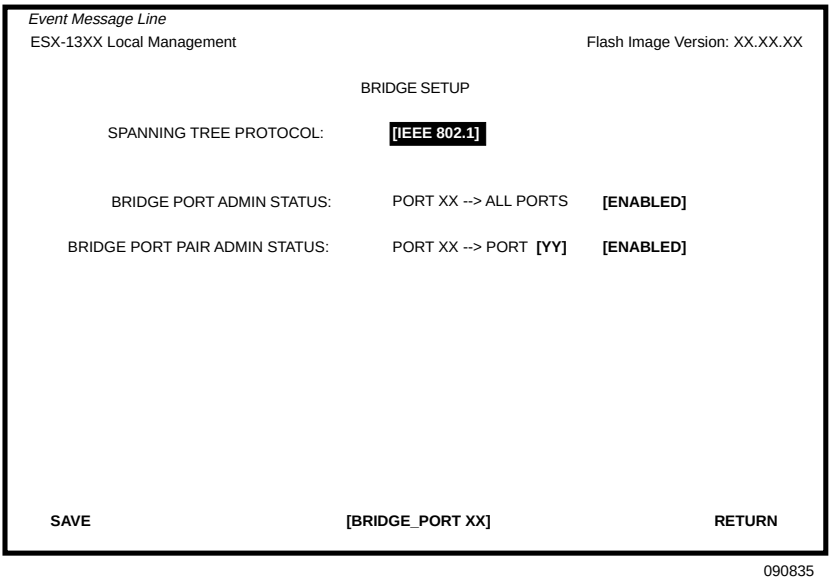


Figure 8-1 The Bridge Setup Screen

8.1 BRIDGE SETUP SCREEN FIELDS

The following list describes each of the Bridge Setup screen fields:

Spanning Tree Protocol
Use this field to select a spanning tree protocol. Possible selections for this field are IEEE 802.1, DEC, or NONE.

Bridge Port Admin Status
Use this field to enable or disable individual ESX bridge ports. Possible selections for this field are ENABLED or DISABLED.

Bridge Port Pair Admin Status
Use this field to enable or disable bridging between bridge port pairs. For example, you can enable Port 1 to bridge traffic to all ports except Port 2.

Bridge_Port *X*
Use this command field to select the ESX bridge port you want to configure.

8.2 SELECTING A SPANNING TREE PROTOCOL

To select the Spanning Tree protocol to be used by the bridge, perform the following steps:

1. Use the arrow keys to highlight the **SPANNING TREE PROTOCOL** field.
2. Press SPACE bar or BACKSPACE to select **[IEEE 802.1]**, **[DEC]**, or **[NONE]**.
3. Use the arrow keys to highlight the **SAVE** command field.
4. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

8.3 SELECTING THE PORT ADMINISTRATIVE STATUS

To select the bridge port administrative status, perform the following steps:

1. Use the arrow keys to highlight the **[BRIDGE_PORT *X*]** field.
2. Press SPACE bar or BACKSPACE to select the bridge port you want to configure. The selected bridge port appears in the Bridge Port Admin Status field.
3. Use the arrow keys to highlight the **BRIDGE PORT ADMIN STATUS: PORT X - - > ALL PORTS *[ENABLED]*** field.
4. Press SPACE bar or BACKSPACE to select **ENABLED** or **DISABLED**.

   For example, the following bridge setup indicates that bridge port 01 is configured to bridge traffic to all ports:

   BRIDGE PORT ADMIN STATUS: PORT **01** - - > ALL PORTS **[ENABLED]**
5. Use the arrow keys to highlight the **SAVE** command field.
6. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

8.4 SELECTING BRIDGE PORT PAIR ADMINISTRATIVE STATUS

To select the bridge port pair administrative status, perform the following steps:

1. Use the arrow keys to highlight the **[BRIDGE_PORT *X*]** field.
2. Press SPACE bar or BACKSPACE to select the bridge port you want to configure. The selected bridge port appears in the Bridge Port Pair Admin Status field.
3. Use the arrow keys to highlight the **BRIDGE PORT PAIR ADMIN STATUS: PORT X - -> *PORT [Y]*** field.
4. Press SPACE bar or BACKSPACE to select the port you want to enable or disable bridge traffic.
5. Use the arrow keys to highlight the **BRIDGE PORT PAIR ADMIN STATUS: PORT X - -> PORT [Y] *[ENABLED]*** field.
6. Press SPACE bar or BACKSPACE to select **ENABLED** or **DISABLED**.

   For example, the following bridge setup indicates that bridge port 01 is configured NOT to bridge traffic to bridge port 02:

   BRIDGE PORT PAIR ADMIN STATUS: PORT **01** - - > PORT **[02] [DISABLED]**
7. Use the arrow keys to highlight the **SAVE** command field.
8. Press ENTER. The Event Message field at the top of the screen displays “SAVED OK”.

CHAPTER 9
THE DEVICE SPECIFIC SETUP SCREEN

This chapter identifies the Device Specific Setup screen. For display and configuration access, refer to the manual for the device associated with this interface. Figure 9-1 shows the Device Specific Setup screen.

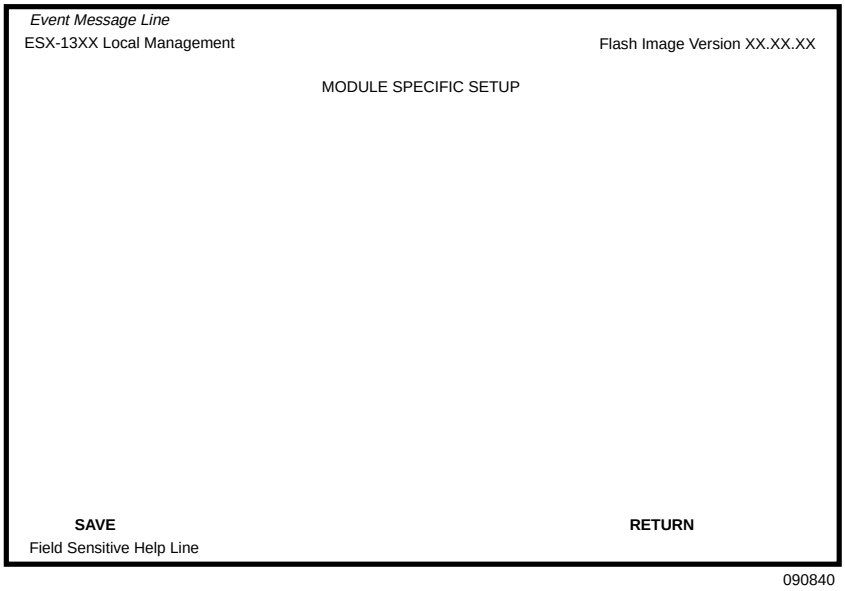
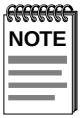


Figure 9-1 The Device Specific Setup Screen

CHAPTER 10
THE PORT REDIRECT FUNCTION SCREEN

Figure 10-1 shows the Port Redirect Function screen. The Port Redirect Function screen allows you to redirect frames from a source port to a destination port. You can set a source port to have one or more destination ports. For example, you can set port 1 as a source port with three destinations, ports 2, 3, and 4. Traffic from port 1 is then automatically redirected to ports 2, 3, and 4.



Although all traffic from the source port (not including errored frames) is sent to the destination port, normal switching is still performed for all frames on the source port.

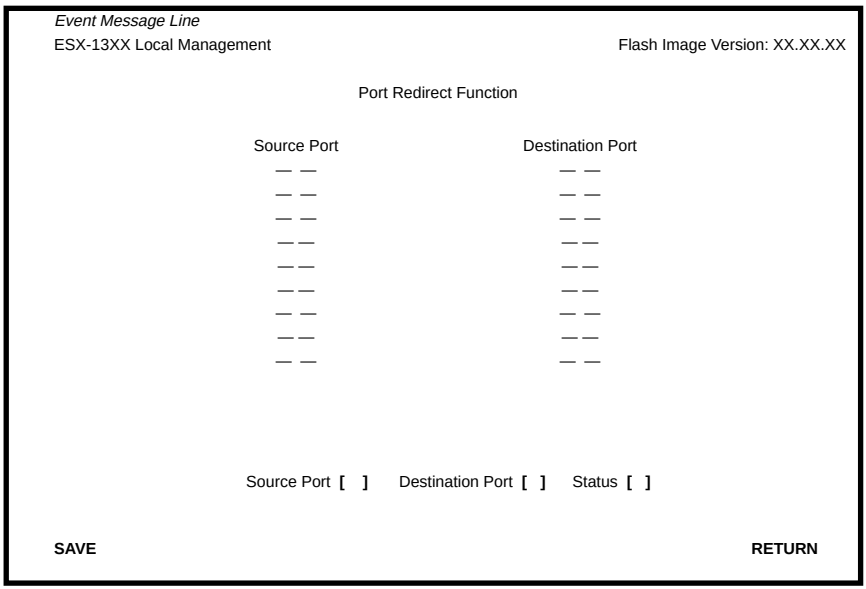


Figure 10-1 The Port Redirect Function Screen

10.1 PORT REDIRECT FUNCTION SCREEN FIELDS

The following list describes each of the Port Redirect Function screen fields:

Source Port (Read-only)
Shows which ports are currently set as source ports.

Destination Port (Read-only)
Shows which ports are currently set as destination ports.

Source Port [n] (Selectable)
Allows you to select a port [n] to be changed to a source port.

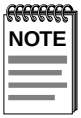
Destination Port [n] (Selectable)
Allows you to select a port [n] to be changed to a destination port.

Status Port (Selectable)
Allows you to add or delete a source port and/or a destination port.

10.2 CHANGING SOURCE AND DESTINATION PORTS

Add or delete source port and destination port entries, as follows:

1. Use the arrow keys to highlight the **SOURCE PORT** command field.
2. Press the SPACE bar or BACKSPACE one or more times to increment or decrement the port number displayed in the brackets **[n]** until the appropriate port number is displayed.
3. Use the arrow keys to highlight the **DESTINATION PORT** command field.
4. Use the SPACE bar or BACKSPACE again to step to the appropriate port number for the destination port.
5. Use the arrow keys to highlight the **STATUS** command field.
6. Use the SPACE bar to select either the **ADD** or **DEL** (delete) option. Press ENTER. This adds or deletes the port selections made in steps 2 and 4 and also updates the screen **SOURCE PORT** and **DESTINATION PORT** list.



If you want to set more than one port redirect, repeat steps 1 through 6 for each additional setting, then go to step 7 to save all the new settings at once.

7. Use the arrow keys to highlight the **SAVE** command field at the bottom of the screen. Press ENTER. The message “SAVED OK” is displayed. This saves the new settings and the **SOURCE PORT** and D**ESTINATION PORT** read-only fields are updated to include the new settings.

CHAPTER 11
THE COMPONENT STATUS SCREEN

Figure 11-1 shows the Component Status screen. The Component Status screen monitors the status of the MIB Components of the ESX.

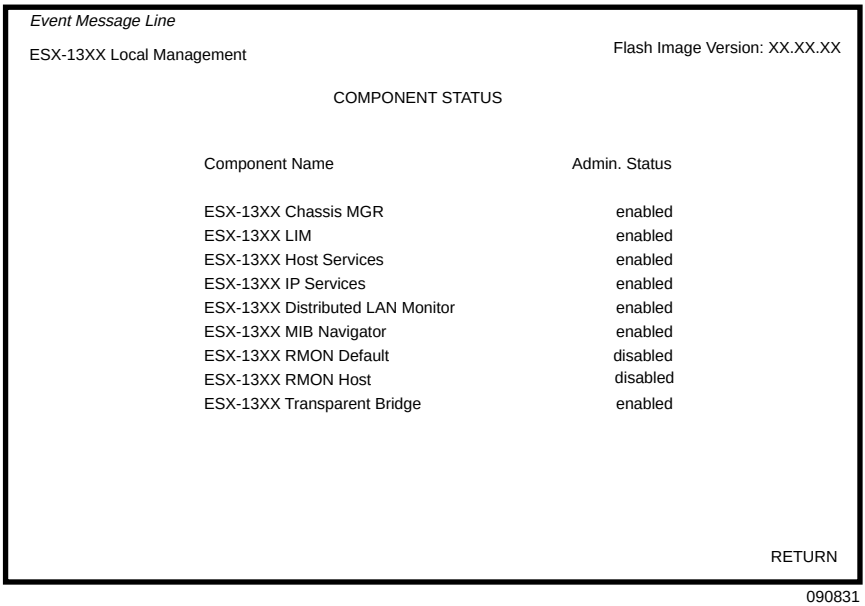


Figure 11-1 The Component Status Screen

The Component Status table lists the administrative status (Admin. Status) of the ESX MIB Components. The Admin. Status field displays two states: enabled and disabled. Refer to Figure 11-1 for a list of the ESX MIB Component Names.

CHAPTER 12
THE MIB-2 STATISTICS SCREEN

Figure 12-1 shows the Interface Statistics screen. The Interface Statistics screen displays error, collision, and traffic statistics for specified ESX interfaces.

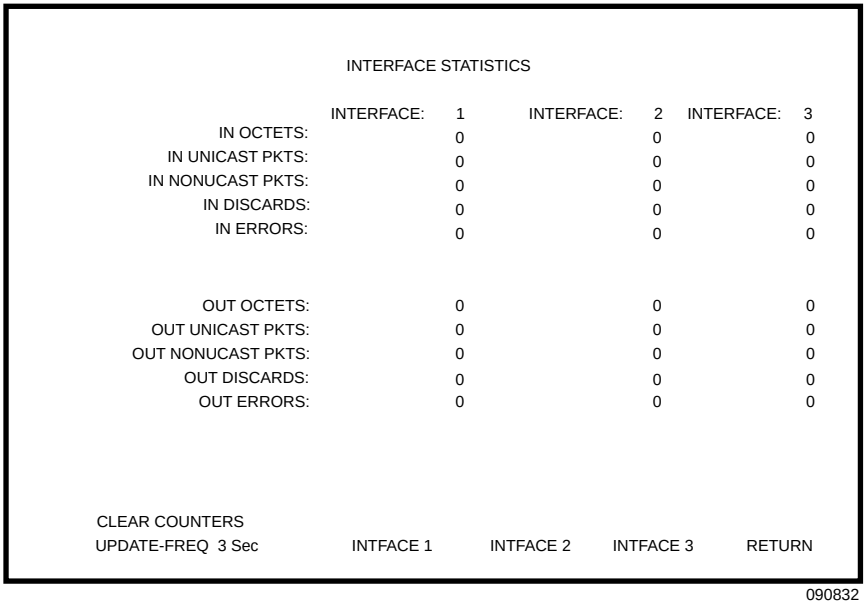


Figure 12-1 The Interface Statistics Screen

12.1 MIB-2 STATISTICS SCREEN FIELDS

The following list describes the Interface Statistics screen fields:

In Octets

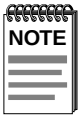
This field displays the number of octets (bytes) received by the interface.

In Unicast Pkts

This field displays the number of unicast packets (packets destined for one specific address) received on the interface.

In Nonucast
This field displays the number of non-unicast packets (multicast and broadcast packets; packets destined for more than one address) received by the interface.

In Discards
This field displays the total number of packets discarded by the interface due to a lack of available resources.



For interface 13, the BRIM port, the In Discards field displays the number of times the ESX had to discard packets - any number of packets - received on interface 13.

In Errors
This field displays the total number of errors received on the interface. The number displayed in the In Errors display field can be composed of the following errors:

- Out Of Window (OOW) collisions – Collisions caused by a station on the network violating Carrier Sense and transmitting at will, a cable failure occurring during the transmission of a frame, or network propagation delay greater than 51.2 μs.
- Cyclic Redundancy Check (CRC) errors – Errors in the 4-byte CRC field of a frame which ensures that the data received by the ESX is the same as the data transmitted by the originating device.
- Alignment Errors – Alignment errors are frames which are misaligned. A misaligned frame is one which contains a non-integral number of bytes.
- Runt Packets – Runt packets are packets smaller than the minimum Ethernet frame size of 64 bytes, not including preamble.
- Giant Packets – Giant packets are those whose size exceeds the maximum Ethernet frame size of 1,518 bytes, not including preamble.

A complete breakdown of In Errors may be obtained from the ESX RMON MIB. Refer to your remote management package documentation for instructions on how to obtain this breakdown.

Out Octets
This field displays the number of octets (bytes) transmitted by the interface.

Out Unicast Pkts
This field displays the number of unicast packets (packets destined for one specific address) transmitted by the interface.

Out Nonucast
This field displays the number of non-unicast packets (multicast and broadcast packets; packets destined for more than one address) transmitted by the interface.

Out Discards
This field displays the total number of packets discarded by the interface due to a lack of available resources.

Out Errors
This field displays the total number of errors for a given interface:

Update-Freq
Use this field to select the time interval between Network/Slot/Port counter updates. You can select update intervals in increments of 3 seconds, with the maximum interval being 99 seconds.

Interface
This command field allows you to select the interface(s) you want to monitor.

12.2 SELECTING AN UPDATE-FREQ

The ESX updates the Bridge Statistics screen every three seconds by default. The UPDATE-FREQ command allows you to adjust the frequency in intervals of 3 seconds. The maximum update frequency is 99 seconds.

To adjust the UPDATE-FREQ, perform the following steps:

1. Use the arrow keys to highlight the **UPDATE-FREQ** command field.

2. Press [+/=] or [–] until the desired time/frequency appears (this number increments/decrements in 3 second intervals with a minimum of 3 seconds and a maximum of 99 seconds).
3. Press ENTER.

12.3 CLEARING STATISTICS COUNTERS

The ESX provides a mechanism for resetting the statistics counter displays for all interfaces to zero. To clear counters, perform the following steps:

Local Management does not ask for verification before clearing counters. Initiating this command will clear the counters immediately.

1. Use the arrow keys to highlight the **CLEAR COUNTERS** command field.
2. Press ENTER. All counters will be reset to zero and be updated after the current UPDATE-FREQ has passed.

12.4 SELECTING AN INTERFACE

When the Bridge Statistics Screen first appears, statistics are displayed for Interface 1, Interface 2, and Interface 3. To view statistics for other interfaces, perform the following steps:

1. Use the arrow keys to highlight any one of the **INTERFACE** fields at the bottom of the screen.
2. Press SHIFT and [+/=] or [–] until the desired interface appears.
3. Press ENTER. Statistics associated with the selected interface appear.

CHAPTER 13
THE MIB NAVIGATOR SCREEN

This chapter explains how to use the MIB Navigator utility. The MIB Navigator allows access to a command set from which you can configure and manage the ESX. Figure 13-1 shows the MIB Navigator screen.

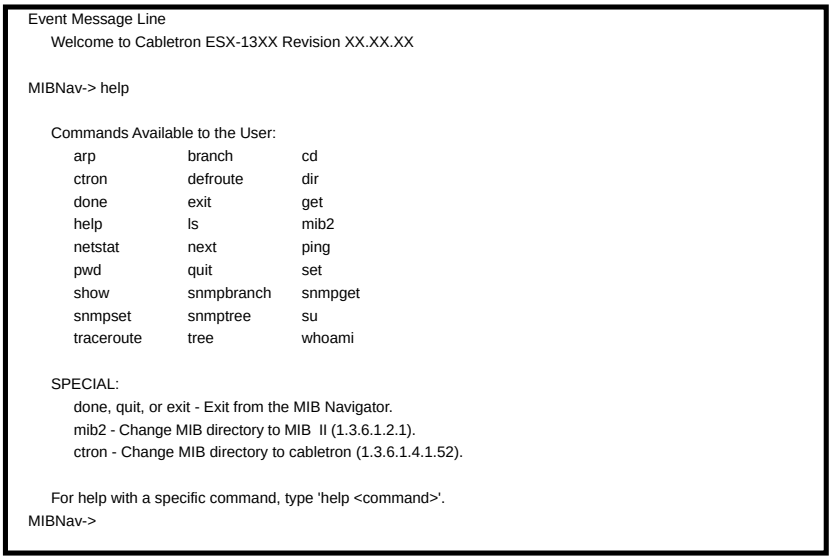

Event Message Line
Welcome to Cabletron ESX-13XX Revision XX.XX.XX
MIBNav-> help
Commands Available to the User:
arp branch cd
ctron defroute dir
done exit get
help ls mib2
netstat next ping
pwd quit set
show snmpbranch snmpget
snmpset snmptree su
traceroute tree whoami
SPECIAL:
done, quit, or exit - Exit from the MIB Navigator.
mib2 - Change MIB directory to MIB II (1.3.6.1.2.1).
ctron - Change MIB directory to cabletron (1.3.6.1.4.1.52).
For help with a specific command, type 'help <command>'.
MIBNav->
090829

Figure 13-1 The MIB Navigator Screen

13.1 MANAGING DEVICE MIBs

The MIB Navigator lets you to manage objects in the ESX Management Information Bases (MIBs). MIBs are databases of objects used for managing the device and determining the ESX configuration. The commands within the MIB Navigator allow you to view and modify a device's objects.

The MIB Navigator views the MIB tree hierarchy as a directory. Figure 13-2 shows the MIB tree hierarchy. Each layer is numerically encoded, so that every branch group and leaf object in the MIB is identified by a corresponding number, known as an Object Identifier (OID). This allows the MIB Navigator to navigate through the MIB and access the manageable leaf objects.

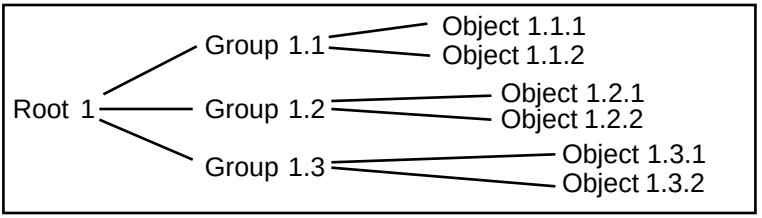


Figure 13-2 Hierarchical MIB Tree Structure

Often an ASCII name is assigned to a leaf object's OID, making it more readable. To identify the value for the object "ip Forwarding" you would use the OID (/1/3/6/1/2/1/4/1), or its ASCII name (/iso/org/dod/internet/mgmt/mib-2/ip/ipForwarding).

13.2 MIB NAVIGATOR COMMAND SET OVERVIEW

The MIB Navigator command set provides the following commands:

Navigation Commands

Navigation commands allow you to access and manage the MIB for the device running the MIB Navigator. Some of these commands also provide user community-string information. The commands are as follows:

- branch
- cd
- ctron
- dir
- get
- help
- ls
- mib2
- next
- pwd
- set
- show
- su
- tree
- whoami

Built-In Commands

Built-In commands allow you to access and manage network devices connected to the device running the MIB Navigator. The commands are as follows:

- arp
- defroute
- netstat
- ping
- snmpbranch
- snmpget
- snmpset
- snmptree
- traceroute

Special Commands

Special Commands allow you to exit from the MIB Navigator. The commands are as follows:

- done
- quit
- exit

13.2.1 Conventions for MIB Navigator Commands

This manual uses the following conventions for denoting commands:

- Information keyed by the user is shown in this helvetica font.
- Command arguments are indicated by two types of brackets:
  - required arguments are enclosed by [ ].
  - optional arguments are enclosed by < >.

MIB Navigator command conventions are as follows:

- To abort the output or interrupt a process, the escape character is ^C (where ^ equals the Control key).
- A slash (/) proceeding an OID issues that command from the root directory regardless of where you are in the MIB. If no slash precedes the OID the command issues from your current MIB location.
- Dot notation (1.1.1.1) is equivalent to slash notation (1/1/1/1). Use slash notation with the navigational commands, and the dot notation with the built-in commands that are using SNMP to access and manage network devices.

MIB Navigation Commands are listed in the format shown below:

command:

Syntax:	This entry provides the format that the MIB Navigator command requires. It indicates where arguments, if any, must be specified.
Description:	This entry briefly describes the command and its uses.
Options:	This entry lists any additional fields which may be added to the command and their format.
Example:	This entry shows an example of the command.

13.2.2 Navigation Commands

The following MIB Navigation commands allow you to move from MIB object to MIB object within the MIB tree.

branch:

Syntax: branch [path]

Description: The branch command displays all of the leaves in the MIB tree below a specified path. The information displayed includes the path name, the object ASCII name, the type of object (i.e., integer, counter, time tick, etc.), and the current value of each leaf object.

Options: Not Applicable

Example:

```
MIBNav-> branch

# /1/3/6/1/2/1/7/1   udpInDatagrams   COUNTER   38216
# /1/3/6/1/2/1/7/2   udpNoPorts       COUNTER   0
# /1/3/6/1/2/1/7/3   udpInErrors      COUNTER   0
```

051456

cd:

Syntax: cd [path] or cd [option]

Description: The cd command allows you to change directories within a MIB subtree (branch). The path specified must be valid, or the MIB Navigator will not perform the cd operation.

Options: .. Moves you one subtree above the current one.

/ Moves you to the root.

Example:

```
MIBNav-> cd iso/org/dod/internet/mgmt
```

051457

ctron:

Syntax: ctron

Description: The ctron command allows you to change directories to the Cabletron MIB (1.3.6.1.4.1.52) without keying in the entire path.

Options: Not Applicable

Example:

```
MIBNav-> ctron
```

051458

help:

Syntax: help <COMMAND>

Description: The help command provides general help on how to use the MIB Navigator or how to use a particular MIB Navigator command.

Options: Not Applicable

Example:

```
MIBNav-> help su

Command:        su
Format:         su <Community Name>
Allows user to change his/her community name, in
order to allow different access to the MIB.
```

051459

mib2:

Syntax: mib2

Description: The mib2 command allows you to move directly to the MIB II subtree (1.3.6.1.2.1) without entering the entire path.

Options: Not Applicable

Example:

```
MIBNav-> mib2
```

051460

next:

Syntax: next [path]

Description: The next command enables you to determine the next leaf in the specified path within the managed device's MIB.

Options: Not Applicable

Example:

```
MIBNav-> next /1/3/6/1/2/1

#/1/3/6/1/2/1/1/1     sysDescr     String   CtronRev.X.XX.XX
```

051461

pwd:

Syntax: pwd

Description: The pwd command displays the full path name for the directory in which you are currently working. The directory is displayed in ASCII format.

Options: Not Applicable

Example:

```
MIBNav-> pwd

# /iso/org/dod/internet/mgmt/mib-2
```

051462

set:

Syntax: set <OID> <value>

Description: The set command enables you to set the value of a managed object. This command is valid only for leaf entries in the current MIB tree, or for managed objects in the MIB.

If the leaf specified does not exist for the given path, MIB Navigator asks for a value. The following lists possible value types:

(i)nteger - number
(c)ounter - number
(g)auge - number
(t)ime ticks - number
o(p)aque - “value” (with quotation marks)
(s)tring - “value” (with quotation marks)
(o)id - OID number with dotted punctuation
(a)ddress - IP address in DDN format
(m)ac - MAC address in hexadecimal format
(n)ull - no type

Options: Not Applicable

Example:

```
MIBNav-> set /1/3/6/1/4/1/52/1/6/4/7 122.1.1.1

Type: (i)nteger (a)ddress (c)ounter (g)auge (o)id:
```

051463

su:

Syntax: su [community name]

Description: The su command enables you to change your community name to allow for different access to the MIB. The community name that you enter allows you either read only, read-write, or super-user access to that device's MIBs, depending on the level of security access assigned the password through the SNMP Community Names screen. See Chapter 5 for more information about community names.

Options: Not Applicable

Example:

```
MIBNav-> su public
```

051464

tree:

Syntax: tree

Description: The tree command provides a display of the entire MIB for the device. Leaves and associated values are displayed in columns.

Options: Not Applicable

Example:

```
MIBNav-> tree

# /1/3/6/1/2/1/1/1   sysDescr      STRING       EMRev X.X.X.X
# /1/3/6/1/2/1/1/2   sysObjectId   OBJECT ID    1.3.6.1.4.1.52
# /1/3/6/1/2/1/1/3   sysUpTime     TIME TICKS   8098654
# /1/3/6/1/2/1/1/4   sysContact    STRING       AlZwie/MIS
```

051465

whoami:

Syntax: whoami

Description: The whoami command displays your community string and access privileges to the MIB. When using the whoami command one of these three access levels appears: read-only, read-write, and super-user.

Options: Not Applicable

Example:

```
MIBNav-> whoami

# Community Name      : super
# Access Level        : SuperUser
```

051466

13.2.3 Built-In Commands

The built-in commands listed in this section activate functions on the LM managed device or devices being accessed through MIB Navigation.

arp:

Syntax: arp <options>

Description: The arp command provides access to the ARP (Address Resolution Protocol) cache, enabling you to view cache data, delete entries, or add a static route. Super-user access is required to delete an entry or add a static route.

Each ARP cache entry lists the network *interface* that the device is connected to, the device's *network address* or IP address, the device's *physical address* or MAC address, and the *media type* of connection to the device. Media types are displayed as numbers, which stand for the following states:

1 - Other
2 - Invalid entry (cannot ping device, timed out, etc.)
3 - Dynamic route entry
4 - Static route entry (not subject to change)

Options: -a View cache data
-d delete an IP address entry. Requires additional arguments: <Interface Number> <IP address>
-s Adds a static entry. Requires additional arguments: <Interface Number> <IP address> <MAC address>

Example:

```
MIBNav-> arp -d 1 122.144.52.68

# /1/3/6/1/2/1/7/1   udpInDatagrams   COUNTER   38216
# /1/3/6/1/2/1/7/2   udpNoPorts       COUNTER   0
# /1/3/6/1/2/1/7/3   udpInErrors      COUNTER   0
```

defroute:

Syntax: defroute [interface number] [IP address]

Description: The defroute command allows you to set the default IP route to a managed device through the specified interface.

Options: Not Applicable

Example:

```
MIBNav-> defroute 2 147.152.42.32
```

051469

netstat:

Syntax: netstat [option]

Description: The netstat command provides a display of general network statistics for the managed device. The netstat command must be used with one of the two display options.

Options: -i Displays status and capability information for each interface.
-r Displays routing information for each interface.

Example:

```
MIBNav-> netstat -i
Interface + Description   MTU    Speed      Admin  Oper  MAC Addr

# 1 (ethernet - csmacd)   1514   10000000   up     up    0x00 0x00 0x1d 0x07 0x50 0x0e
# 2 (ethernet - csmacd)   1514   10000000   up     up    0x00 0x00 0x1d 0x07 0x50 0x0f
# 3 (ethernet - csmacd)   1514   10000000   up     up    0x00 0x00 0x1d 0x07 0x50 0x10
# 4 (ethernet - csmacd)   1514   10000000   up     up    0x00 0x00 0x1d 0x07 0x50 0x11

MIBNav-> netstat -r
Destination          Next-hop              Interface

# Default Route      DirectConnection      1
# 134.141.0.0        DirectConnection      2
# 134.141.0.0        DirectConnection      3
```

051470

ping:

Syntax: ping [IP address]

Description: The ping command generates an outbound ping request to check the status (alive/not alive) of a device at a specified IP address.

Options: Not Applicable

Example:

```
MIBNav-> ping 122.144.40.10
122.144.40.10 is alive
```

051471

snmpbranch:

Syntax: snmpbranch [IP address] [community name] [OID]

Description: The snmpbranch command enables you to query another SNMP device. The command provides a display of objects that match the specified OID. If no match is made, no object is displayed.

Options: Not Applicable

Example:

```
MIBNav-> snmpbranch 2.4.8.1 public 1.3.6.2.1.1

# /1/3/6/1/2/1/1/1   sysDescr      STRING       EMRev X.X.X.X
# /1/3/6/1/2/1/1/2   sysObjectId   OBJECT ID    1.3.6.1.4.1.52
# /1/3/6/1/2/1/1/3   sysUpTime     TIME TICKS   8098654
# /1/3/6/1/2/1/1/4   sysContact    STRING       AlZwie/MIS
```

051473

snmpget:

Syntax: snmpget [IP address] [community name] [OID]

Description: The snmpget command enables you to query another SNMP device to obtain a value for a specified object. This command requires the appropriate community string and object id.

Options: Not Applicable

Example:

```
MIBNav-> snmpget 22.44.61.22 public 1.3.6.1.2.1.1.1.0

# Cabletron ESX-13XX Revision X.XX.XX
```

051474

snmpset:

Syntax: snmpset [IP address] [community name]

Description: The snmpset command enables you to set the value of an object in other SNMP devices. This command requires the appropriate community string and OID.

When defining a new leaf set, MIB Navigator asks for a value. The following lists possible value types:

(i)nteger - number
(c)ounter - number
(g)auge - number
(t)ime ticks - number
o(p)aque - “value” (with quotation marks)
(s)tring - “value” (with quotation marks)
(o)id - OID number with dotted punctuation
(a)ddress - IP address in DDN format
(m)ac - MAC address in hexadecimal format
(n)ull - no type

Options: Not Applicable

Example:

```
MIBNav-> snmpset 122.44.1.2 public

        1.3.6.1.2.1.1.4.0 "Cyrus/MIS"
```

051475

snmptree:

Syntax: snmptree [IP address] [community name]

Description: The snmptree command provides a display of all objects in the device and their corresponding values.

Options: Not Applicable

Example:

```
MIBNav-> snmptree 122.144.89.10 public

# /1/3/6/1/2/1/1/1 sysDescr      STRING      EMRev X.X.X.X
# /1/3/6/1/2/1/1/2 sysObjectId   OBJECT ID   1.3.6.1.4.1.52
# /1/3/6/1/2/1/1/3 sysUpTime     TIME TICKS  8098654
# /1/3/6/1/2/1/1/4 sysContact    STRING      AlZwie/MIS
```

051476

traceroute:

Syntax: traceroute [IP address]

Description: The traceroute command generates a TRACEROUTE request to a specified IP address and provides a display of all next-hop routers in the path to the device. If the device is not reached, the command displays all next-hop routers to the point of failure.

Options: Not Applicable

Example:

```
MIBNav-> traceroute 122.144.11.52

# next-hop[1]  122.144.61.45
# next-hop[2]  122.144.8.113
```

051477

13.2.4 Special Commands

done, quit, exit:

Syntax: done

Description: These commands enable you to exit from the MIB Navigator and return to the Main Menu screen.

Options: Not Applicable

Example:

```
MIBNav-> done

Connection closed
```

051472

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